CLAIMS

1. A ceramic porous body comprising at least Si as a chemical component, the ceramic porous body being obtained by adding a porous silica powder or a porous silica-containing compound powder to a forming raw material to prepare a clay, forming the resulting ceramic clay into a specific shape, and firing the formed product.

2. The ceramic porous body according to claim 1, wherein the porous silica powder or the porous silica-containing compound powder has been melted during the firing and reacted with other components of the forming raw material to form a silica-containing compound.

3. The ceramic porous body according to claim 2, wherein the silica-containing compound formed by the reaction is a compound of a cordierite composition.

4. The ceramic porous body according to any of claims 1 to 3, wherein the porous silica powder or the porous silica-containing compound powder is an amorphous silica powder or an amorphous silica-containing compound powder.

5. The ceramic porous body according to any of claims 1 to 4, wherein the porous silica powder or the porous silica-containing compound powder has a bulk density of 1 g/cm^3 or less.

6. The ceramic porous body according to any of claims 1 to 4, wherein the porous silica powder or the porous silica-containing compound powder has a bulk density of 0.2 to 1 g/cm^3.

7. The ceramic porous body according to any of claims 1 to 6, wherein the porous silica powder or the porous silica-containing compound powder is added in an amount of 40 vol% or less of the total amount of the forming raw material after adding the powder.

8. The ceramic porous body according to any of claims 1 to 7, wherein the ceramic porous body has a honeycomb shape.

9. A ceramic porous body comprising at least Si as a chemical component, the ceramic porous body being obtained by adding silica gel granules with a 50% particle size (D_{50}) of 10 to 100 μm to a forming raw material to prepare a clay, forming the resulting ceramic clay into a specific shape, and firing the formed product.

10. The ceramic porous body according to claim 9, wherein the silica gel granules have a particle size distribution defined by the following expressions (1) and (2) with respect to the 50% particle size (D_{50}):

$$0.1 \leq D_{10}/D_{50} \leq 0.5 \quad (1)$$

$$2 \leq D_{90}/D_{50} \leq 5 \quad (2)$$

where, D_{50}: 50% particle size, D_{10}: 10% particle size, and D_{90}: 90% particle size.

11. The ceramic porous body according to claim 9 or 10, wherein the silica gel granules include particles with an aspect ratio of 5 or less in an amount of 90 mass% or more.

12. The ceramic porous body according to any of claims 9 to 11, wherein the silica

gel granules do not substantially include particles with a particle size exceeding 100 μm.

13. The ceramic porous body according to any of claims 9 to 12, wherein the silica gel granules are formed of a porous body with a pore volume of 0.4 to 2.0 ml/g.

14. The ceramic porous body according to any of claims 9 to 13, wherein the silica gel granules are particles with a specific surface area (JIS R1626) of 100 to 1000 m^2/g.

15. The ceramic porous body according to any of claims 9 to 14, wherein Si accounts for 95 to 99.99 mol% of the total metal elements of the silica gel.

16. The ceramic porous body according to any of claims 9 to 15, wherein the silica gel granules are obtained by sieving silica gel raw material granules with a 50% particle size (D_{50}) of 10 to 150 μm through a screen with a pore diameter of 44 to 210 μm to control the 50% particle size (D_{50}) within a range of 10 to 100 μm.

17. The ceramic porous body according to claim 16, wherein granules having a particle size distribution defined by the following expressions (3) and (4) with respect to the 50% particle size (D_{50}) are used as the silica gel raw material granules:

$$0.05 \leq d_{10}/d_{50} \leq 0.5 \quad (3)$$

$$2 \leq d_{90}/d_{50} \leq 8 \quad (4)$$

where, D_{50}: 50% particle size, D_{10}: 10% particle size, and D_{90}: 90% particle size.

18. The ceramic porous body according to claim 16 or 17, wherein the silica gel granules are sieved using an air jet sieving method.

19. A method of producing a formed product which produces a ceramic porous body upon firing, the method comprising adding silica gel granules or silica gel granules and water-absorbing polymer particles to a forming raw material to prepare a clay, and integrally forming the resulting ceramic clay into a formed product.

20. A method of producing a formed product which produces a ceramic porous body upon firing, the method comprising adding silica gel granules or silica gel granules and water-absorbing polymer particles to a forming raw material to prepare a clay, and forming the resulting ceramic clay into a formed product using a continuous forming machine.